

Amendments to the Claims: This listing of claims will replace all prior versions, and listings, of claims in the application

Listing of Claims:

1. (Currently Amended) ~~Automatic~~An automatic handling and transportation device for printer housings ~~characterised in that it comprises~~comprising:

a support ~~(31)~~, for support of the housings able to be positioned in alignment with a housing-bearing assembly ~~(51)~~ and in proximity with it; and

a grasping/holding device ~~(32)~~ able adapted to be displaced between i) a transferral position in which said grasping/holding device ~~(32)~~ interacts with said housing ~~(2)~~ installed on said housing-bearing assembly ~~(51)~~ to grasp or free it and ii) a transportation position in which the housing ~~(2)~~ held by the grasping/holding device ~~(32)~~ is on the support ~~(31)~~.

2. (Currently Amended) ~~Device~~The device, according to claim 1, ~~characterised in that it comprises~~further comprising a basic mobile unit ~~(10)~~ associated with a first means of displacement ~~(11, 14)~~ arranged to displace said basic mobile unit ~~(10)~~ on a first route ~~(X)~~; and at least one handling unit ~~(30)~~ mounted on said basic mobile unit ~~(10)~~, said handling unit ~~(30)~~ including said support ~~(31)~~, which is held in a jutting position on a second route ~~(Y)~~, transverse to said first route ~~(X)~~ and parallel to said housing-bearing assembly ~~(51)~~ mounted in a jutting position on a printing machine ~~(50)~~, and a second means of displacement ~~(35, 39, 40)~~ arranged to displace said grasping/holding device ~~(32)~~ on said second route ~~(Y)~~ in relation to the support ~~(31)~~.

3. (Currently Amended) ~~Device~~The device according to claim 2, ~~characterised in that~~wherein the basic mobile unit ~~(10)~~ moves along guide means ~~(1, 3)~~ which extend on said first horizontal route ~~(X)~~ along a stretch which includes a first transfer area in which said handling unit ~~(30)~~ mounted on the basic mobile unit ~~(10)~~ operates to exchange housings with said printing machine ~~(50)~~, and at least a second transfer area in which the support ~~(31)~~ on the handling unit ~~(30)~~ mounted on the basic mobile unit ~~(10)~~ is able to be positioned in alignment with a housing support ~~(71, 81)~~, installed on a transportation unit ~~(70)~~ or in a place of storage ~~(80)~~, said handling unit ~~(30)~~ operating to exchange housings with said transportation unit ~~(70)~~, or with said place of storage ~~(80)~~.

4. (Currently Amended) ~~Device~~The device, according to claim 3, ~~characterised in that~~wherein a single handling unit ~~(30)~~ is mounted on the basic mobile unit ~~(10)~~, and fitted with third means of displacement ~~(44, 45, 46)~~ arranged to move the handling unit in relation to the basic mobile unit ~~(10)~~ on a third, vertical route ~~(Z)~~, transverse to the first and second routes ~~(X, Y)~~.

5. (Currently Amended) ~~Device~~The device, according to claim 3, ~~characterised in that~~wherein several handling units ~~(30)~~ are mounted on the basic mobile unit ~~(10)~~ in fixed positions in which the respective supports ~~(31)~~ are at a height coinciding with the height of several housing-bearing assemblies ~~(51)~~ on the printing machine ~~(50)~~, or supports ~~(71, 81)~~ on the transportation unit ~~(70)~~, or the place of storage ~~(80)~~.

6. (Currently Amended) ~~Device~~The device, according to claim 5, ~~characterised in that~~wherein several housing-bearing assemblies ~~(51)~~ on the printing machine ~~(50)~~ comprise all of the housing-bearing assemblies ~~(51)~~ arranged on one side of the support drum ~~(52)~~ of the printing machine ~~(50)~~.

7. (Currently Amended) ~~Device~~The device, according to claim 6, ~~characterised in that~~wherein said fixed positions on several handling units ~~(30)~~ on the basic mobile unit ~~(10)~~ are vertically aligned.

8. (Currently Amended) ~~Device~~The device, according to claim 5, ~~characterised in that~~wherein said fixed positions of the various handling units ~~(30)~~ on the basic mobile unit ~~(10)~~ are such that the respective supports ~~(31)~~ can be aligned at once with various housing-bearing assemblies ~~(51)~~ on the printing machine ~~(50)~~ or supports ~~(71, 81)~~ on the transportation unit ~~(70)~~, or the place of storage ~~(80)~~.

9. (Currently Amended) ~~Device~~The device, according to claim 8, ~~characterised in that~~wherein various housing-bearing assemblies ~~(51)~~ on the printing machine ~~(50)~~ comprise all of the housing-bearing assemblies ~~(51)~~ on both sides of a support drum ~~(52)~~ on the printing machine ~~(50)~~.

10. (Currently Amended) ~~Device~~The device, according to claim 9, ~~characterised in that~~wherein the supports ~~(71, 81)~~ on the transportation unit ~~(70)~~ and/or the place of storage ~~(80)~~ are in identical positions relative to the housing-bearing assemblies ~~(51)~~ on the printing machine ~~(50)~~.

11. (Currently Amended) ~~Device~~The device according to claim 3, ~~characterised in that~~wherein the basic mobile unit ~~(10)~~ comprises a lower section ~~(13)~~ fitted with wheels ~~(14)~~ in contact with at least one way ~~(1)~~ which forms part of said guide-means ~~(1,3)~~ on the first route ~~(X)~~ at least one of said wheels ~~(14)~~ being a tractor wheel activated by a motor ~~(11)~~ and an elevated section ~~(15)~~ on which supports the handling unit ~~(30)~~.

12. (Currently Amended) ~~Device~~The device, according to claim 3, ~~characterised in that~~wherein said second means of displacement ~~(35, 39, 40)~~ comprises guide means ~~(40)~~ on the second route ~~(Y)~~, adjacent to the support ~~(31)~~, with which is associated a saddle ~~(39)~~ to which is connected the grasping/holding device ~~(32)~~, and a motor ~~(35)~~ connected and arranged to move said saddle ~~(39)~~ along said guide means ~~(40)~~.

13. (Currently Amended) ~~Device~~The device, according to claim 12, ~~characterised in that it comprises~~further comprising means of transference ~~(33, 37, 38)~~ arranged to transfer said support ~~(31)~~ on said second route ~~(Y)~~ in order to bring the furthest extremity of the support ~~(31)~~ close to the furthest extremity of the housing-bearing assembly ~~(51)~~ or support ~~(71, 81)~~ when the support ~~(31)~~ is in alignment with the same.

14. (Currently Amended) ~~Device~~The device, according to claim 13, ~~characterised in that~~wherein said means of transfer ~~(33, 37, 38)~~ comprises guide means ~~(38)~~ on the second route ~~(Y)~~, with which is associated a saddle ~~(37)~~ to which is fixed an extremity of the support ~~(31)~~, and a motor ~~(33)~~ connected and arranged to move said saddle ~~(37)~~ along said guide means ~~(38)~~.

15. (Currently Amended) ~~Device~~The device, according to claim 14, ~~characterised in that~~wherein said guide means ~~(40)~~, along which said saddle ~~(39)~~ moves, bears the grasping/holding device ~~(32)~~ fixed to said saddle ~~(39)~~, bearing the support ~~(31)~~ and moving along the same.

16. (Currently Amended) ~~Device~~The device, according to claim 3, ~~characterised in that~~wherein said grasping/holding device ~~(32)~~ comprises a tubular body ~~(41)~~ mounted to slide along the support ~~(31)~~ and provided with an external surface at one extremity ~~(42)~~ arranged to couple with the internal surface of an extremity of the housing ~~(2)~~ facing a section of the smaller diameter of the housing-bearing assembly ~~(51)~~ or support ~~(71, 81)~~, and at least one bore ~~(34)~~ through said tubular body ~~(41)~~, open at said external surface.

17. (Currently Amended) ~~Device~~The device, according to claim 16, ~~characterised in that wherein~~ said means of activation ~~(34, 49)~~ of the grasping/holding device ~~(32)~~ comprises first valves arranged to connect said bore ~~(34)~~ to a source of compressed air ~~(49)~~, with which it facilitates a slight dilation of the extremity of the housing ~~(2)~~ for said coupling and then disconnecting the bore ~~(34)~~ from said source of compressed air ~~(49)~~, facilitating recovery of the form of the extremity of the housing ~~(2)~~ and a tightening of the furthest extremity ~~(42)~~ of the tubular body ~~(41)~~.

18. (Currently Amended) ~~Device~~The device, according to claim 17, ~~characterised in that wherein~~ said valves are also arranged to connect said bore ~~(34)~~ to a vacuum source once disconnected from the source of compressed air ~~(49)~~.

19. (Currently Amended) ~~Device~~The device, according to claim 16 ~~or 17~~, ~~characterised in that wherein~~ the first valves connect alternatively with second valves arranged to connect injection nozzles incorporated into the housing-bearing assembly ~~(51)~~ or support ~~(71, 81)~~ to a source of compressed air in order to create an air cushion between the housing ~~(2)~~ and the housing-bearing assembly ~~(51)~~ or support ~~(71, 81)~~ with which to facilitate a sliding movement between the two.

20. (Currently Amended) ~~Device~~The device, according to claim 3, ~~characterised in that wherein~~ said third means of displacement ~~(44, 45, 46)~~ comprises guide means ~~(44)~~, arranged on the third route ~~(Z)~~ along an elevated section ~~(15)~~ of the basic mobile unit ~~(10)~~, with which is associated a saddle ~~(45)~~ on which is mounted a handling unit ~~(30)~~, and a motor ~~(46)~~ connected and arranged to move said saddle ~~(45)~~ along said guide means ~~(44)~~.

21. (Currently Amended) ~~Device~~The device, according to claim 3, ~~characterised in that wherein~~ the support ~~(31, 71, 81)~~ has the form of a mandril in a jutting position and incorporates at least one radial centering device ~~(47, 48)~~ to align the housings ~~(2)~~ coaxially with the support ~~(31)~~.

22. (Currently Amended) ~~Device~~The device, according to claim 21, ~~characterised in that wherein~~ said radial centering device ~~(47, 48)~~ includes at least two pivoting arms ~~(47)~~, each with a wheel mounted at its furthest point activated by an actuator ~~(48)~~ to project from the external surface of the support ~~(31)~~ or to be hidden inside the same.

23. (Currently Amended) ~~Device~~The device, according to claim 11, characterised in ~~that~~wherein a basic mobile unit ~~(10)~~ also comprises an upper section ~~(16)~~ fitted with wheels ~~(17)~~ in contact with at least one upper way ~~(3)~~ which forms part of the guide means ~~(1, 3)~~ on the first route ~~(X)~~.

24. (Currently Amended) ~~Device~~The device, according to claim 23, characterised in ~~that~~wherein said upper way ~~(3)~~ has associated with it, along the length of the same, at least one electrical supply conducting track ~~(43)~~ and/or control signals and said upper section ~~(16)~~ of the basic mobile unit ~~(10)~~ including a dynamic electrical current input device ~~(18)~~ to supply said electrical current and/or signals from said track ~~(43)~~.

25. (Currently Amended) ~~Device~~The device, according to claim 3, characterised in ~~that it comprises~~further comprising a positioning device on the first route ~~(X)~~ ~~made up of~~comprising at least one detector ~~chosen~~ selected from a ~~the~~ group which ~~includes~~ consisting of a telemeter, a codifier and an optical gauge, connected to an electronic processing means ~~arranged~~ adapted to control the activation of said first means of displacement ~~(11, 14)~~.

26. (Currently Amended) ~~Device~~The device, according to claim 24, characterised in ~~that~~wherein said positioning device on the first route ~~(X)~~ also includes at least one photoelectric sensor connected to said electronic processing means for control of the activation of said first means of displacement ~~(11, 14)~~ in order to refine the positioning carried out by said detector.

27. (Currently Amended) ~~Device~~The device, according to claim 3, characterised in ~~that it comprises~~further comprising a positioning device in third route ~~(Z)~~ made up of a detector ~~chosen~~ selected from a ~~the~~ group ~~including~~ consisting of a telemeter, a codifier or an optical gauge connected to an electronic positioning means ~~arranged~~ adapted to control the activation of said third means of displacement ~~(44, 45, 46)~~.

28. (Currently Amended) ~~Device~~The device, according to claim 27, characterised in ~~that~~wherein said positioning device on the first route ~~(Z)~~ also includes at least one photoelectric sensor connected to said electronic positioning means for controlling the activation of the third means of displacement ~~(44, 45, 46)~~ in order to refine the positioning carried out by said detector.

29. (Currently Amended) ~~Device~~The device, according to claim 5, characterised in ~~that~~wherein said transportation unit ~~(70)~~ comprises a raising and lowering device activated by a

means of activation and arranged to lower the supports (71) to heights suitable for handling the housings (2), and for raising the supports (71) to said heights coinciding with the height of the supports (31) of the various handling units (30) mounted on the basic mobile unit (10) in fixed positions.

30. (Currently Amended) ~~Device~~The device, according to claim 2, ~~characterised in that~~wherein said handling unit (30) is mounted on said basic mobile unit (10) by means of a means of rotation arranged to rotate the handling unit (30) in relation to the basic mobile unit (10) around an axis parallel to the third vertical route (Z), transverse to the first and second routes (X, Y), and at a ~~certain~~predetermined angle with respect to the second route (Y).

31. (Currently Amended) ~~Device~~The device, according to ~~any preceding claims characterised in that~~claim 1 wherein said support (31, 71, 81) has the form of a mandril (31) in a jutting position with the furthest extremity able to be facing, with or without contact, said housing-bearing assembly (51).

32. (Currently Amended) ~~Device~~The device, according to ~~any claim 1-a-30, characterised in that~~wherein said support (31, 71, 81) has the form of a cradle with an extremity able to be situated in alignment with said housing-bearing assembly (51).

33. (New) The device, according to claim 17, wherein the first valves connect alternatively with second valves arranged to connect injection nozzles incorporated into the housing-bearing assembly or support to a source of compressed air in order to create an air cushion between the housing and the housing-bearing assembly or support with which to facilitate a sliding movement between the two.